

An extension to respond to the Office Action is respectfully requested. A Petition of time to respond to the Office Action and the appropriate fee are being filed concurrently with this Amendment.

Please amend the application as follows:

In the Claims

Please amend Claim(s) 15, 22-24 and 29. Amendments to the claims are indicated in the attached "Marked Up Version of Amendments" (pages 6 and 7).

15. (Fourth Amendment) A Raman endoscope comprising:
an endoscope having an optical fiber extending from a proximal end to a distal end of the endoscope;
an optical filter at the distal end of the endoscope;
a focal plane array sensor at the distal end of the endoscope that detects filtered Raman scattered radiation directed onto the distal end of the endoscope and through the optical filter;
a laser optically connected to the optical fiber at the proximal end of the endoscope to irradiate an object to be imaged; and
a computer having a memory device that is connected to the sensor, the memory device storing an electronic representation of the detected radiation.

22. (Twice Amended) A Raman endoscope comprising:
an endoscope having an optical fiber coupler extending from a proximal end to a distal end;
a focal plane array sensor at the distal end of the endoscope that detects Raman scattered radiation directed onto the distal end of the endoscope;
a filter system at the distal end of the endoscope that filters light directed onto the focal plane array sensor;

a laser optically connected to the optical fiber coupler at the proximal end of the endoscope to irradiate an object to be imaged;

a broadband light source optically connected to the optical fiber coupler; and

a computer having an electronic memory connected to the sensor such that the memory stores an electronic representation of the detected radiation.

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23. (Twice Amended) The Raman endoscope of Claim 22 further comprising an additional optical fiber coupler extending within the endoscope to direct light from the broadband light source onto the object to be imaged.

24. (Twice Amended) The Raman endoscope of Claim 23 further comprising a detector coupled to an optical fiber device in the endoscope to record a visible image of the object.

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29. (Thrice Amended) A method of endoscopic imaging comprising:

providing a sensor array on a distal end of an endoscope, a filter on the distal end of the endoscope the endoscope having a fiber optic cable extending from a proximal end of the endoscope to the distal end, the proximal end of the fiber optic cable being optically coupled to a radiation source;

positioning the distal end of the endoscope adjacent to tissue to be examined;

irradiating a region of interest on the tissue with radiation from the radiation source that is delivered through the fiber optic cable;

sensing endogenous fluorescence or Raman scattered light returning to the distal end of the endoscope with the filtered sensor array in response to the irradiation of the region of interest with the radiation, the returning light being directed onto the sensor array at the distal end of the endoscope with a lens;

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generating an electronic representation of the region of interest
with the sensor array; and
storing the representation in a computer electronic memory.

Please add the following new claims:

35. (New) The method of Claim 29 further comprising providing a broadband light source that is optically coupled to the fiber optic cable.

36. (New) The method of Claim 29 further comprising determining concentrations of a plurality of tissue components.

37. (New) The method of Claim 29 wherein the step of providing a filter further comprises providing a tunable filter.

38. (New) The method of Claim 29 further comprising determining weight percentages of components of the tissue from the stored electronic representation.

REMARKS

Claims 29-34 have been rejected under 35 U.S.C. 112, first paragraph.

Applicants respectfully traverse this rejection and request reconsideration thereof in view of the following considerations: Firstly, the application specifically makes reference to the use of fluorescence spectroscopy in the background on page 2, and has submitted numerous prior art references describing the use of either laser or broadband light sources used to obtain fluorescence images of tissue (e.g. 5,125,404 (incorporated by reference on page 15), W089/02718 and 5,115,137, etc.) Applicants found in connection with the development of the Raman systems described in the present application, that the distally mounted imaging device used for Raman measurements can also be used for fluorescence measurements. One skilled in the art at the time of filing of the present application would readily understand the illumination wavelength(s), for example, that the system described